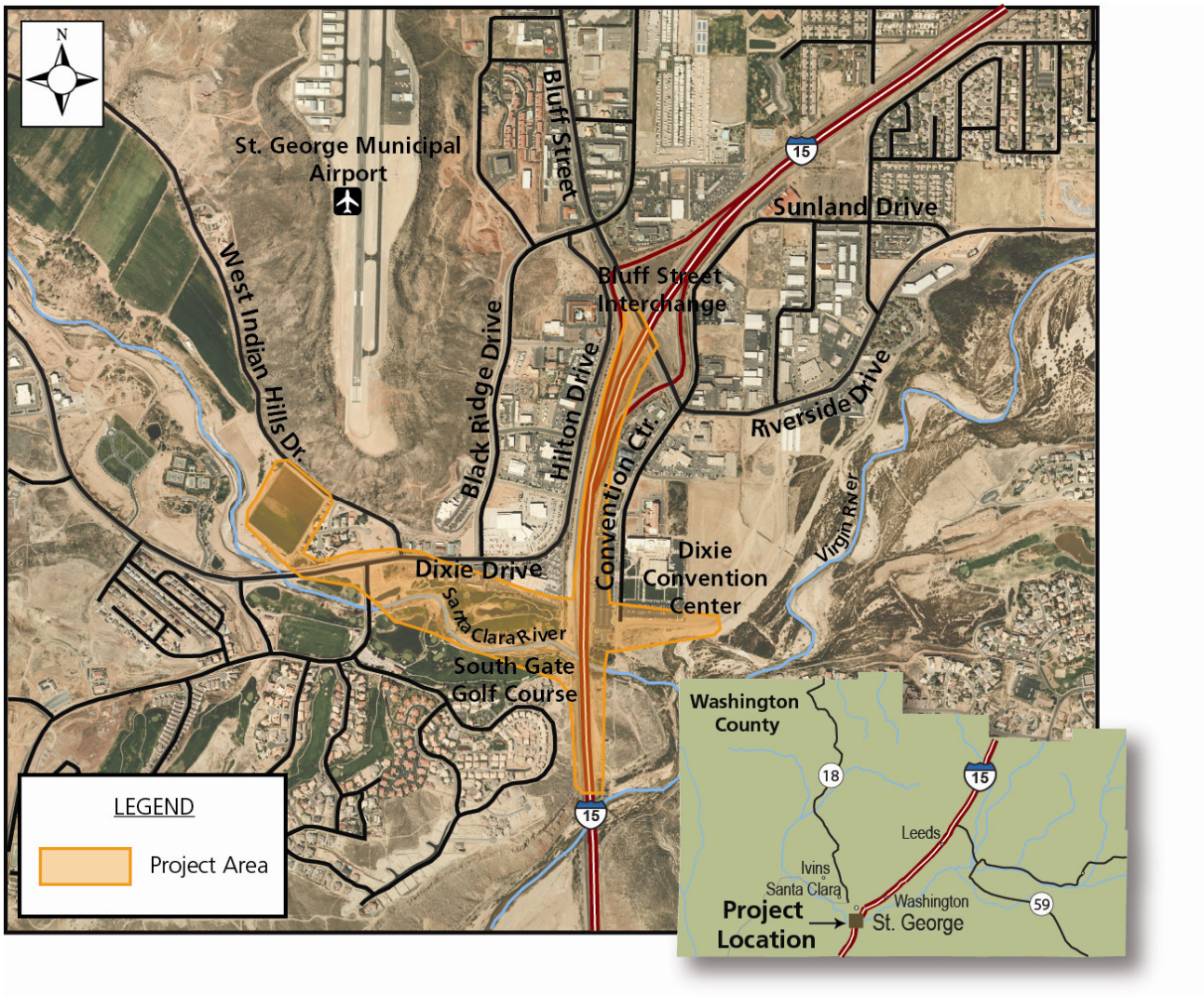
Dixie Drive Interchange Justification Report

Project Number S-I15-1(77)6
PIN Number 5729

Located in St. George, Utah



October 2008

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EXECUTIVE SUMMARY

Traffic growth in St. George has increased at vigorous rates for over 15 years. One of the busiest streets in Southern Utah is Bluff Street (SR-18), a north/south arterial road that conducts over 50,000 vehicles per day, approaching the capacity of its 5-lane configuration. In 2006, UDOT and the City of St. George performed a corridor study of Bluff Street, with an emphasis on the interchange with I-15. The study was subsequently completed in July, 2007. The result of the study showed that all traffic north and west of I-15 in the vicinity of Bluff Street all converges to 1 intersection, Bluff Street and Main Street. The high traffic volume through this single intersection causes traffic congestion to radiate to surrounding intersections, reducing efficiency of the Bluff Street Interchange ramps on I-15, Bluff Street, Main Street, Black Ridge Drive, Hilton Drive, Sunland Drive, Riverside Drive, and Convention Center Drive. Recommendations that came from this study included looking at a "dual interchange", where the milepost 6 interchange would share collector distributor roads and ramps with a new adjacent interchange about 3,300 feet to the south at Dixie Drive. This new Dixie Drive interchange would remove a high percentage of vehicles from the Bluff Street and Main Street intersection and Bluff Street interchange, thus reducing congestion in the area.

This newly proposed Dixie Drive Interchange at milepost 5 is a key component of the long range transportation network in southwestern Utah and the greater St. George area. The interchange will provide interstate access to the Southgate and Green Valley residential areas to the west, to the Hilton Drive commercial area, and to commercial destinations in the vicinity of the Dixie Convention Center. Many outlying areas such as Bloomington Hills to the south and Santa Clara and Ivins to the north also would use this interchange as a connection to I-15, so it is truly a regional solution to traffic congestion.

Over the last decade, Washington County, Utah has experienced unprecedented growth and it is expected that the population will increase by 141 percent by the year 2030 with the City of St. George containing 56 percent of the county's population. As the population of Washington County and the City of St. George continues to grow, the existing transportation facilities will not be able to accommodate the associated growth in travel demand. As a result, there is a need for the Dixie Drive Interchange.

Results of the design year 2035 traffic operations analysis of the proposed interchange show that the critical operational areas are projected to operate at a LOS "D" or higher. The merge and diverge areas with I-15 are projected to operate at LOS "D" or higher while the SPI ramp/cross street intersection is projected to operate at a LOS "C". Signalized intersections on the adjacent roadways should have adequate capacity to accommodate the projected traffic volumes and are projected to operate at LOS "D" or higher. See Table 1 and Figure E-1 for further details.

The results of the traffic operations analysis, when combined with the future land use and local and regional transportation plans, demonstrate the existing interchanges and local roads can neither provide the necessary access nor be improved to accommodate the design year traffic and

land use demands while at the same time providing the access intended by the proposed interchange. Reasonable alternatives for design options and transportation system management type improvements have been assessed and provisions for accommodating such facilities, if future needs are identified, will be incorporated into the design of the project.

Table 1: Traffic Analysis Summary

Freeway Segment	2008 No Build	2035 No Build	2035 Build
	LOS	LOS	LOS
I-15 Mailine Bloomington to Bluff	B	F	N/A
I-15 Mailine Bloomington to Dixie	N/A	N/A	D
I-15 Mailine Dixie to Bluff	N/A	N/A	D
Interchange Segment Merge and Diverge	2008 No Build	2035 No Build	2035 Build
	LOS	LOS	LOS
Bloomington NB On Ramp Merge	B	F	B
Bloomington SB Off Ramp Diverge	B	F	A
Dixie NB Off Ramp Diverge	N/A	N/A	A
Dixie SB On Ramp Diverge	N/A	N/A	C
Dixie NB On Ramp Merge	N/A	N/A	D
Dixie SB Off Ramp Diverge	N/A	N/A	C
Bluff NB Off Ramp Diverge	B	F	A
Bluff SB On Ramp Merge	B	F	D
Mainline Weaving	2008 No Build	2035 No Build	2035 Build
	LOS	LOS	LOS
I-15 Northbound between Dixie Drive and Brigham Rd	N/A	N/A	C
I-15 Southbound between Dixie Drive and Brigham Rd	N/A	N/A	D
C-D Roads Weaving	2008 No Build	2035 No Build	2035 Build
	LOS	LOS	LOS
Northbound CD Road Between Dixie Drive and Bluff Street	N/A	N/A	C
Southbound CD Road Between Dixie Drive and Bluff Street	N/A	N/A	C

Intersection	2008 PM - No Build (HCM Analysis)	2035 PM - No Build (Traffic Simulation)	2035 PM - No Build (HCM Analysis)	2035 PM - Build (Traffic Simulation)	2035 PM - Build (HCM Analysis)
	LOS	LOS	LOS	LOS	LOS
Dixie Dr Interchange SPUI	n/a	n/a	n/a	C	n/a
NB Ramps & Bluff St	C	F	F	D	D
SB Ramps & Bluff St	B	D	B	B	B
Blackridge Dr/Main St and Bluff St	D	F	F	E	D
Convention Center Dr and Bluff St	B	F	C	B	C
270 East and Bluff St	n/a	E	C	C	C
Blackridge Dr and Hilton Dr (South)	F	F	F	B	B
Dixie Dr and Indian Hills Dr	B	D	E	B	B
Dixie Dr and Blackridge Dr	n/a	n/a	n/a	C	B
Indian Hills and Hilton Dr	n/a	n/a	n/a	B	B

EIGHT POINTS

As part of the IJR process FHWA outlines eight points that are to be addressed. The following table lists the eight points, briefly explains how each point is satisfied and directs the reader where a more detailed explanation can be found in the main body of the report.

Point	Comment
1. The need being addressed by the request cannot be adequately satisfied by existing interchanges to the Interstate, and/or local roads and streets in the corridor can neither provide the desired access, nor can they be reasonably improved (such as access control along surface streets, improving traffic control, modifying ramp terminals and intersection, adding turn bays or lengthening storage) to satisfactorily accommodate the design-year traffic demands.	The Bluff Street Interchange cannot handle the future project travel demand. Reasonable improvements to the existing interchange would allow traffic to function at an acceptable LOS up to 2015. Beyond 2015 it was determined that an additional interchange would be needed to adequately service future travel demand. See pages 21-27 and Table 8 on page 30.
2. The need being addressed by the request cannot be adequately satisfied by reasonable transportation system management (TSM) (such as ramp metering, mass transit, and HOV [high occupancy vehicle] facilities), geometric design, and alternative improvements to the Interstate without the proposed change(s) in access.	The project need could not be adequately satisfied by a reasonable TSM. See page 18.
3. An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections.	An operational and safety analysis was conducted and it was concluded that the proposed Dixie Drive Interchange would not adversely affect the safety and operation of I-15. See pages 34-36
4. The proposed access connects to a public road only and will provide for all traffic movements.	The proposed Dixie Drive Interchange will act as a dual interchange with the existing Bluff Street Interchange and will provide all traffic movements. See pages 18-19.
5. The proposal considers and is consistent with local and regional land use and transportation plans.	The proposed interchange complies with the City of St. George Road Master Plan and the Dixie MPO's Long Term Plan. See page 20.
6. In corridors where the potential exists for future multiple interchange additions, a comprehensive corridor or network study must accompany all requests for new or revised access with recommendations that address all of the proposed and desired access changes within the context of a longer-range system or network plan.	The potential for future multiple interchanges in the area does not exist. See page 20.
7. When a new or revised access point is due to a new, expanded, or substantial change in current or planned future development or land use, requests must demonstrate appropriate coordination has occurred between the development and any proposed transportation system improvements.	The proposed Dixie Drive Interchange is not due to any new, expanded, or substantial changes in the current or future land use plan. See page 13.
8. The proposal can be expected to be included as an alternative in the required environmental evaluation, review, and processing.	A EA is currently being conducted for the proposed Dixie Dr. Interchange. See page 33.

FIGURE E-1
TRAFFIC ANALYSIS SUMMARY